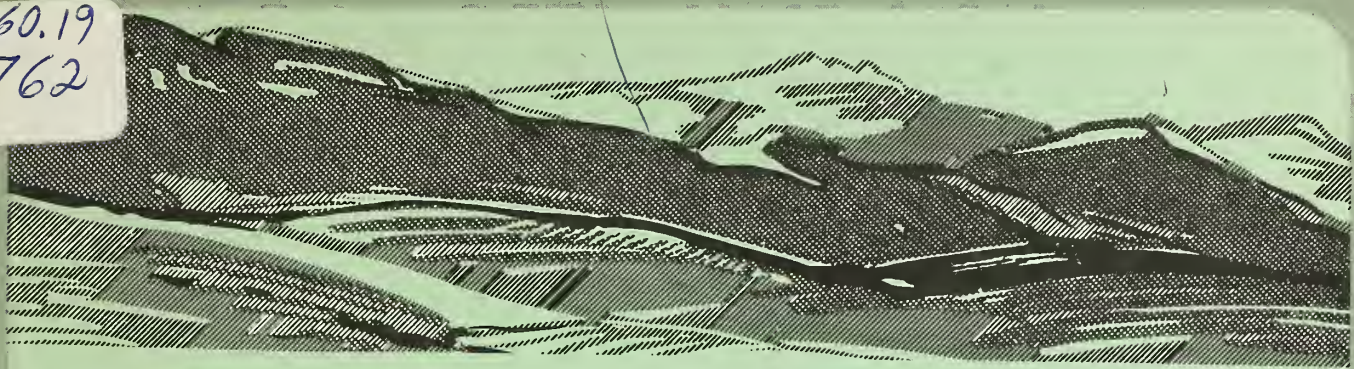


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RANGE IMPROVEMENT



VOL. 19, NO. 1

NOTES

SPRING 1974

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FOREST SERVICE — U. S. DEPARTMENT OF AGRICULTURE
INTERMOUNTAIN REGION — OGDEN, UTAH

STATEMENT OF PURPOSE

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This publication is printed primarily to inform professional range administrators of important range improvement and management developments and findings. These "NOTES" may include extracts of published papers, unpublished preliminary reports of research work, unpublished reports on administrative studies and personal observations or suggestions of other range administrators. No claim is made as to the accuracy or completeness of studies or conclusions drawn.

All who read these RANGE IMPROVEMENT NOTES are encouraged to submit material for publication, or suggestions for improving its usefulness. Full credit will be given for any material used.

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CHARACTERISTICS OF ELK CALVING HABITAT ON
THE SAWTOOTH NATIONAL FOREST, IDAHO,
By
T. A. Phillips*

Elk calving habitat can be damaged or destroyed by logging, road and trail construction, grazing, and other resource activities. The adverse effects of these activities can be prevented or minimized if elk calving areas are identified in the field examination phase of project planning. Once identified, the calving areas can be avoided when the resource activities are implemented. The problem lies in identifying the calving areas. It has long been recognized that elk prefer a definite calving habitat. The object of the study reported here was to locate calving areas and describe the characteristics of the elk calving habitat. It is hoped that the information gained from this study will aid the land manager in identifying elk calving areas and will enable him to improve resource management.

Study Location and Characteristics

The study was conducted in the South Fork of the Boise River drainage on the Fairfield Ranger District of the Sawtooth National Forest. The study area is characterized by steep, rough topography. Elevation ranges from 4500 feet on the west edge of the area to over 10,000 feet at the head of the drainage on the east side. The upper reaches of the study area have been extensively glaciated, and cirque basins and U-shaped valleys are major topographic features. In the lower areas the canyons have the typical V-shaped form of stream-cut valleys.

Conifer timber and sagebrush are the dominant vegetation types on the study area. The timber occurs largely on north and east slopes while sagebrush occurs on south and west slopes. Small meadows occur in cirque basins, around lakes and along some of the streams. There are also limited areas of aspen and forb types. Eighteen habitat types (HT's) have been identified on the study area to date.

Between 500 and 600 head of elk winter in the south Boise River drainage. The main wintering areas are along the river and some of its major lower elevation tributaries. The elk leave the winter ranges in late March and early April and move to the higher portions of the drainage during the summer. They return to the winter range in late November.

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Study Methods

During the winter of 1972-73, the Idaho Fish and Game Department began a migration study on the South Boise River elk herd. Twenty cow elk were trapped and fitted with radio transmitter collars. At weekly intervals these elk were located from a fixed wing aircraft equipped with a radio receiver and directional antenna. The location of each elk was spotted on a map. Following the flight made during the first week in June, the peak of the elk calving season, the habitat occupied by 14 elk was examined on the ground. It was assumed that the elk at these locations had either calved or would calve in the habitat occupied at that time. At each suspected calving site the following information was gathered: the habitat type occupied, the adjacent habitat types used by elk, herbage production per acre, tree and shrub overstory cover, slope, aspect, and elevation.

RESULTS

Habitat Types

At nearly all study sites, two or three habitat types (HT's) were characteristic of elk calving habitat. A conifer timber type was used for cover and an adjacent sagebrush and/or meadow type was used for feeding. The alpine fir/elk sedge HT (Schlatterer 1972) was occupied by elk on 7 of the 14 study sites; the Douglas fir/elk sedge-snowberry HT occurred on four sites; and the Douglas fir/tall shrub HT was found on three sites. Aspen was a common associate in the timber stands. This tree occurred on eight of the 14 study sites. It occurred in small pockets in the conifer timber stands or as an overstory of invading conifer species.

Timber overstory ranged from 20 to 60 percent coverage and averaged 37 percent. Shrub stands under the timber were generally open. The average cover was 13 percent and the range was from zero to 20 percent.

The Mountain big sagebrush/bluebunch wheatgrass HT was most often adjacent to the conifer timber types. This HT occurred on eight of the 14 sites. Meadow was the contiguous type on four sites, while the Mountain big sagebrush/Mountain brush HT occurred on one site. Only on one site were elk using but one habitat type. This was an alpine fir/elk sedge HT in the head of a drainage that had been partly burned. Eleven head of cows and calves were seen on this area. They were using the unburned timber areas for cover and were feeding on elk sedge in the burned area adjacent to the timber.



Productivity

Herbage production under the timber types appeared to have little or no influence on elk as far as habitat preference was concerned. Elk were found on sites producing as little as 100 pounds per acre air-dry weight and on sites producing as much as 1000 pounds per acre. Average understory production in the timber types was 450 pounds per acre. The contiguous sagebrush habitat types were considerably more productive, averaging 750 pounds per acre.

Slope

Moderate slopes were preferred by calving elk. Slope gradient ranged from 10 to 55 percent and averaged 36 percent.

Aspect

The elk showed preference for north and easterly aspects. Eleven of the fourteen sites were on exposures ranging from north through southeast. Two sites were on south exposures and one faced west. Five of the study sites were on north exposures. This was rather surprising, since snow covered much of the area on these slopes and little or no forage was available. However, a close inspection of the sites showed the elk were using a narrow strip of timber just below the ridgetop for cover and were crossing over the ridge to south exposures to feed in the adjacent sagebrush types.

Elevation

The typical calving site was situated near the head of a draw or main drainage. Consequently, site elevations were rather high. Average elevation was 7760 feet and the range was from 6800 to 9000 feet. Eight of the fourteen sites were above the 7500 foot level. Average elevation for the study area is 7200 feet and the highest point is 10,174 feet.

Discussion

It is evident that, for this study location, the following are key characteristics of elk calving habitat:

1. Conifer timber types, generally mixed with aspen, adjacent to openings dominated by sagebrush and/or meadow.
2. Situated at or near the head of a drainage.

3. On moderate slopes at mid to high elevation.

4. Generally on north or easterly exposures.

At least some of these characteristics are common to calving habitat in other areas of the West. The timber-sagebrush complex was noted by Davis (1969) on elk calving areas of the Salmon National Forest. Davis concluded that most of the calving occurred in sagebrush types near stands of conifer timber. Anderson (1954) and Johnson (1951) both found that elk show a definite preference for sagebrush basins for calving. On the other hand, Graf (1955) and Batchelor (1965) found that Roosevelt elk seek areas of dense timber or brush in which to calve. In the Selway District of Idaho, Beeman (1957) found that elk prefer grassy park-like areas with a light interspersation of shrubs and fallen logs.

The timber-meadow complex is also preferred by elk for calving in some areas. This has been noted in Chamberlain Basin in central Idaho where elk use meadows and contiguous lodgepole pine stands during the calving season. A similar situation is found in Stanley Basin on the Sawtooth National Forest.

It is not clear from this study whether calves were dropped in timber or in adjacent openings. Five calves were seen during the study and four of these were with their mothers in openings adjacent to timber. One newborn calf was found in a timbered area lying in the open next to a clump of alpine fir. Where calves are dropped is probably not too important. The important point is that both the timber and the adjacent open areas are major components of the elk calving habitat, and both must be considered when planning resource activities.

The land manager can use elk calving habitat characteristics as a tool in planning resource activities. These characteristics can often be identified on aerial photos and can readily be identified from the air in a helicopter or airplane. Once suspected calving areas have been identified, they can be checked on the ground during the calving season, preferably during the last week in May or the first week in June. If there is evidence of elk calving activity, then resource management plans can be designed to avoid or minimize the impact on the calving areas.

EDITOR'S NOTE: For additional information regarding elk calving behavior, the reader is encouraged to read Lorin Ward's "Sagebrush Control with Herbicide Has Little Effect on Elk Calving Behavior," USDA Forest Service Research Note RM-240, May 1973. Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colo.



Ward summarized his report:

"Elk did not change their calving behavior or grazing activity patterns on a site where 96.7 percent of the big sagebrush cover was killed with 2,4-D herbicide. Analysis of fecal samples from the study site showed no large changes due to spraying in grass-forb ratios consumed. Feeding elk showed no indication they preferred to stay close to timber. Hence, it appeared that sagebrush control, if confined to limited and scattered areas, had no detrimental impact on elk during the calving period."

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Courage often consists as much in

refraining to do

as in doing.



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FENCING TRAILER []

By

Frank Jensen*

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On the Dixie National Forest several miles of new fence are constructed each year and many miles of fences that are no longer needed are removed. There is a variety of equipment on the market for fence construction; however, equipment for removing fences and especially rolling up barbed wire is limited.

Since a sizeable job of removing unneeded fences faced the Forest, a means of mechanizing the operation was sought. Consequently, over the past few years, a "fencing trailer" that meets our needs has been developed. A pictorial review of the trailer and its uses follows:



Figure 1 - The fencing trailer box is seven feet long, four feet wide and one foot deep. The frame is made of three-inch angle iron welded to the axle. The boxes on the corners are made of light metal and are for carrying staples, nails, tools, etc. The trailer box can carry posts and wire.

*Chief, Branch of Range Management, Dixie National Forest - Cedar City, Utah



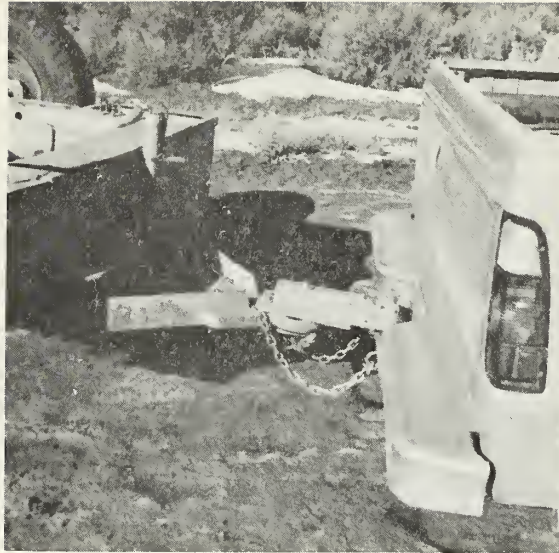


Figure 2 - The trailer tongue has a permanently welded eye coupling for use on a small crawler tractor. A removable trailer hitch (as shown) is used when trailer is towed with a pickup truck.



Figure 3 - Three used front-end automobile hubs are attached to the rear of the trailer for dispersing barbed wire. One-inch angle iron "ears" are attached to the hub to hold the spool of wire. The desired tension on the brake drums can be set with a screwdriver, as shown.





Figure 4 - Three spools of wire can be uniformly laid at one time.

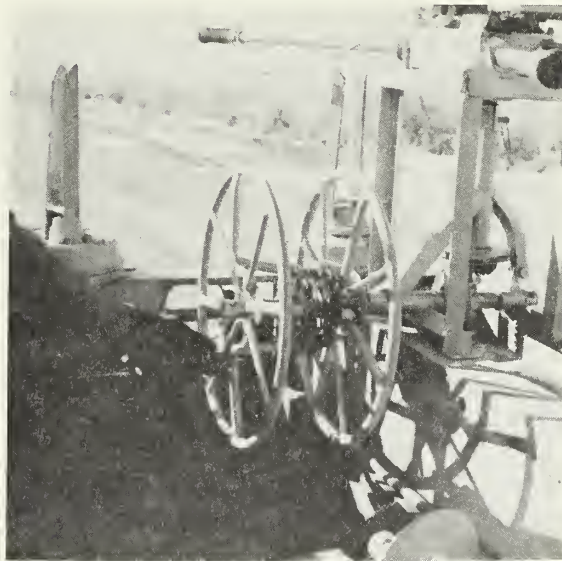


Figure 5 - The wire roller attachment was purchased through the Sears Farm Catalog. It is made for a power takeoff (PTO) on a farm tractor. However, these rollers can easily be converted to accommodate other types of powerheads and altered to fit various size truck or trailer beds. The roller can be reinforced, as needed, to meet specific requirements.



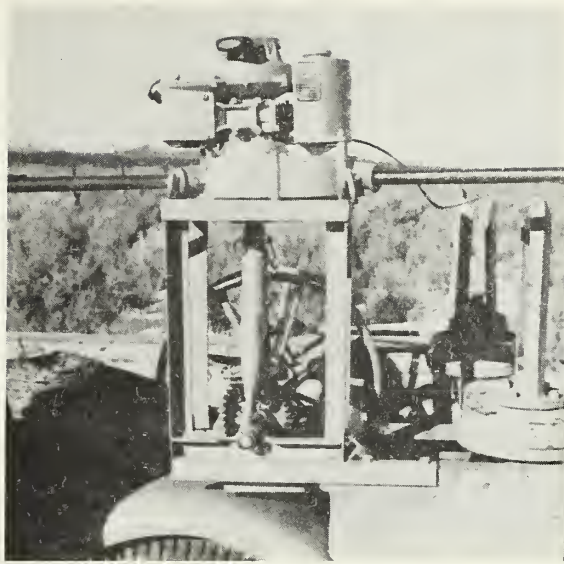


Figure 6 - A frame to hold the powerhead is made of one-inch angle iron. The entire roller can be removed from the trailer by removing three bolts.



Figure 7 - A nine-horsepower hole auger powerhead is used on the wire roller.



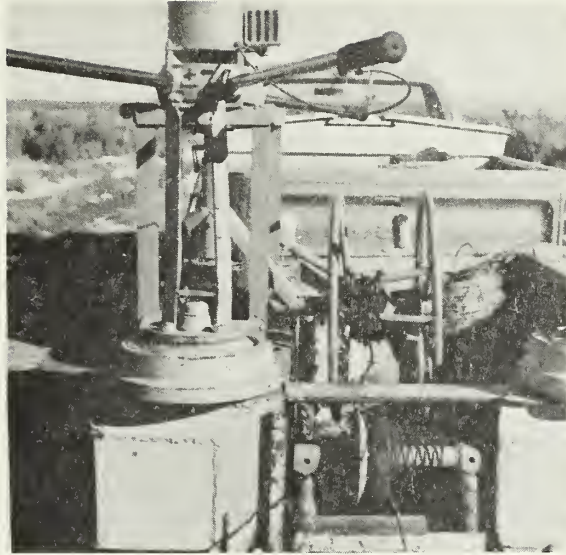


Figure 8 - The level wind attachment is welded to the trailer. The equipment rolls the wire back to original size spools. If the wire is in good condition, it can be reused.

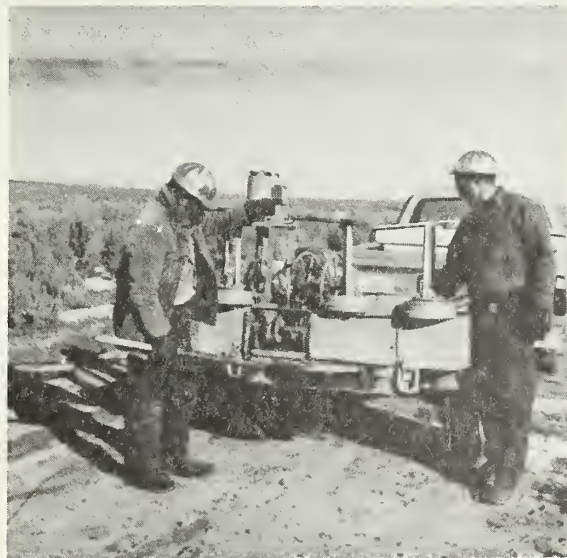


Figure 9 - Wire roller in action. The operator can control the speed of the roller (left hand) by the throttle. The bar (in operator's right hand) is to guide the wire into the level wind attachment.





